

# Home

For Amiga, Spectrum and Public Domain

# Computing WEEKLY

**FREE**  
magazine

**No. 68**  
**June 26-Jul 2, 1984**

45p

Best buy for software-lovers!  
Every week - your computing magazine!

## MSX

tells you all you need to know about the new computers

**WIN**  
**£1,000-worth of great games from UNIQUE**

**Software reviews for:**  
Spectrum, Dragon, CBM 64, BBC, Atari, TI, Oric/Atmos

**Programs to type in for:**  
Spectrum, BBC, CBM 64, Dragon

**PLUS**  
U.S. Scene, news, letters, charts...

## GRAFPAD



## Sir Clive's ads promise

Sir Clive Sinclair has given his personal assurance that he will not advertise delivery times for computers.

He gave the undertaking to Sir Gordon Hayes, director-general of the Office of Fair Trading, following 40 complaints within three years.

As well as Sir Clive's own assurance — which covers any of his companies — an undertaking was also given by the managing director of Sinclair Research, Nigel Scaife.

The 40 complaints had been made to trading standards officers about the ZX80, ZX81 and the Spectrum. There have also been three county court judgments against Sinclair Research and one hearing. Continued on page 3

## Show of strength

New technology is helping firm rate disabled drivers discover their strengths and weaknesses, and modify their cars accordingly.

Eastend Place Mobility Centre is running a programme, with the financial support of Ford Motor Company, to assess disabled clients and calculate the alterations necessary on a standard car.

The three-year project is costing £100,000 and is being sponsored by Ford. The mobile simulator unit is the only one of its kind in the UK, and is. Continued on page 3



# ANIRUG



## BONGO

## Flight Path 737



## Space Pilot

### Bongo

Enjoy the hilarious antics of the comical mouse as he collects the lost diamonds. He climbs ladders, slides down chutes, uses transporter and teleporter to pump across the clouds. Multi screen game with three levels of difficulty.  
Commodore 64 £7.95 — Vc 20 £7.95 — Spectrum £5.50

### Space Pilot

Realise your dreams of being king of the open skies. Fly your aircraft into uncharted dog fights with enemy fighters. Prove how well you can handle your cash. Five stages of tough engagements.  
Commodore 64 £7.95 — Spectrum £5.50



### Flight Path 737

An advanced Pilot Trainer. Written by a flight simulator instructor and pilot. Professional Pilot's eye view.  
Commodore 64 £7.95 — Vc 20 £7.95

## Also available on Disk at £9.95

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MAIL ORDER: 9 HIGH STREET, HORLEY, SURREY. 24 HOUR CREDIT CARD SALES: HORLEY (03894) 6063  
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# Home Computing WEEKLY

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HOME COMPUTING WEEKLY  
BRITAIN'S BRIGHTEST

## MSX COMPUTING

In the special issue of our FREE magazine discover the new MSX range of machines you'll love

- How to program in MSX BASIC, including the first listing as a UK magazine
- The place by the big software houses for MSX games
- What the readers' leader thinks of the new computers



• All the listings in Home Computing Weekly are tested for quality and checked for accuracy. You'll find programs for these machines in this issue

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Readers we welcome your programs, articles and tips

Software houses: send your software for review to the editor. Add contact for competitions and other promotions, too

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## Adverts

*From front page*

for bypassing the Trade Descriptions Act.

An OFT spokesman said that the QJ was not included in the evidence, although there had been complaints about its delivery too.

The advertising Standards Authority has upheld 20 complaints about the QJ.

The undertakings were given to Sir Gordon under part three of the Fair Trading Act which means that, if breached, a court order can be obtained. And if that is not played it would be contempt of court — a serious offence.

A spokesman said the OFT would thank its for the earlier delivery days with consumers going the option of getting back their money if they did not wish to wait.

Waiting times varied according to type of product, but generally it would be 24 days.

Similar remarks said a spokesman what had happened and said it had been extremely difficult to judge demand.

The company had sold 40,000 computers in 1989 and this had risen to 400,000 just three years later. Total computers sold by all companies in the UK had grown from 50,000 in 1975 to 1.4m in 1985.

As soon as the company saw the problems it had stopped advertising. And customers were given the opportunity of getting back their money. Many, however, were prepared to wait.

A spokesman denied a suggestion that the company would need order to finance production.

The reasons for selling by mail-order in the early days of a product's life were to better judge supply against demand and to build a base of interest in the product before retail sales began.

Computer and software companies come in for criticism in the latest report from the advertising watchdog.

In three out of four cases the problem was not available goods were not available.

These are the details:

- A buyer of an Atari 5150 computer found a would save only 85% instead of the advertised 127%. It had Dec Operating System II rather than DOS III.

The ASA considered the advertisement acceptable after finding that the advertiser was aware that the 1980 double

density disc drive would not be available with DOS II and this a leading ad. "There penalties will be available soon." There was also an address for further details.

But the authority said it would have been helpful to indicate that the version of the drive available at the time of the advertisement's appearance was to a different specification.

- A Melbourn, Essex program was not available and a half month after advertisements began to appear, and a complaint.

The advertisement, for the graphics users designer RUCG, said it would be available at the end of October and was on: "Get your order in now, and reserve your copy so that you can be among the first with this revolutionary software."

Programming difficulties had delayed release, and the advertiser.

The ASA said it was concerned that the advertisement had been placed before the company was clearly aware that the product would be on sale.

It was given to consumers that in future only products actually available would be advertised.

- Another complaint related many dealers to a video attempt to find a Commodore 64 package deal at £299.99, a saving of "over £80".

The ASA was shown stock details and merchandise aimed to be sent by Spectram 64, a distribution company.

The panel said it was satisfied that Spectram had not acted unconscionably in offering the goods, but noted that there would have been a period after the appearance of the advertisement during which there would have been a shortage of the merchandise included in the package. It also noted that such a shortage would have been only a short delay.

- The authority took advice over an advertisement by Lerni that a program was "Micro-drive compatible".

Lerni said the phrase was to indicate that it could be used with a Microdrive was connected it could not, however, copy to a Microdrive.

This was not clear enough, said the ASA, noting that a similar program, which did copy to a Micro-drive, had been brought on. Advertisements had been amended.

Advertising Standards Authority, Brook House, Tavistock Place, London WC1V 7NW

## Strength

*From front page*

probably the most noticeable officials seen in Europe.

A Hewlett-Packard computer tests the driver's response to response and hazards shown on the wrap around simulation screen is also determines the strength, co-ordination and joint range in each limb.

"Disabled drivers have a number of problems," said a spokesman for Restored Place Mobility Centre. "First they have to get into the car. Then they have to reach on the gears, seat, windows and brake. The user assesses each person's strength and posture, the adaptations which would be necessary on a standard car."

"For example, a car could be modified to include a combined lever for accelerating and braking if a person was unable to use the foot pedal," she continued.

"Some computer simulations show these adaptations and often fit them. The advantage of this system over our old one is that the reactions are timed automatically. Before, we used to have a person standing behind the driver timing all his or her reactions. Now the computer does all the hard work for us, and more consistently and accurately too."

The mobile computer-controlled unit had its first appointment last week in Norwich. It will be travelling the country, giving disabled people nationwide the opportunity to consider their mobility.

The driving assessment unit is staffed by a full-time therapist and a driving instructor. "We would like to be able to offer disabled people full day driving assessments from our mobile unit," said a spokesman for Restored Place. "If people have had strokes or similar problems, they come to our unit for training. We have an on-site Restored Place doctor, orthopaed and a psychologist, who evaluate each client's problems. Ideally, we would like to be able to offer the service in future from our mobile unit."

"The program written for the Hewlett-Packard is set up in a very easy way from the operator's point of view," she went on. "It's also very rewarding that the driver can turn round and watch his or her progress on the computer, so there's some feedback. This unit is really intended to show first time drivers how they can

drive, and to make them more confident."

The computer simulations unit is housed in a 7.5 metre long van, providing easy access to disabled passengers by a lift. The dashboard is based on that of a Ford Escort, and the motor is fully adapted and functioned. This results are provided immediately from a computer screen.

In the disabled driver has driven previously, a specially equipped Ford Escort is available for practical experience and road test. This car has power assisted steering, hand controls, a wheelchair fix and air chair adaptation.

The mobile unit makes driving assessments available to those who live outside the Surrey area. If you are disabled and wish to make an appointment for a personal driving test while the mobile van is in your area, call 07737 31674.

Future dates for the mobile unit include Devon and Cornwall in July, Cullin and South Wales in September and Warwickshire, Birmingham and Scotland before the end of the year.

Restored Place Mobility Centre, Park Rd, Barnard, Surrey GU7 1JH

## Quicksilver branches out

Quicksilver is branching out in several directions — into education, a housing deal with Asda and covering children's books and software.

Managing director Rod Collins made the announcement, but first under the company was bought by the Argus Press Group.

- Education is to be handled by a new unit of QJ called QED — Quicksilver Education; Danvers. The unit is for games with a serious educational content, and Mr Collins.

The first, out in summer, will be for pre-school and early learning ages and then extend to all age groups.

Discontinuing is introducing in the UK discs and disc drives at reduced prices. If you want to buy 30 single sided, double density discs at a savings too, you'll pay £17.90. Or you could pay £129.90 for a full length, drive drive for the BBC. The drive incorporates an automatic track search and includes cables and manual.

Discontinuing, 20 Orange St, London EC7H 7ED

## The Wheel of Fortune \$2K BBC £9.95

Price: 30 Chesham St., Kensington  
London, W8 5EF

After years of work on producing high-quality software for the BBC only, concentrating efforts on producing superior games I must agree that this is the only game I have seen for the BBC.

After playing the Wheel of Fortune you will yourself in a different world in the famous hall of the tower, your personal information is given. The top left displays a picture of your personality using blocks of graphics. This screen shows the game's picture, all the action and scoring a professional and a trigger. The interesting thing

about these characters is that they both move independently, thus you and your play in the same way as in a game show.

There are 200 different locations, each location shows randomly. You can move in commands in every direction of up to 204 characters. The location keys can be set up with various commands and there is the usual SAVE feature.

The game itself is nothing new and is usual in terms of control, but gives a unique flavor of a good-quality and a carefully written.

instructions	95%
graphics	95%
value for money	75%

★★★★

## Chess II Oric 1/ Atmos 48K £9.95

Price: 100, Totten Park, Newmarket Rd, Cambridge

Chess II is a top update of Tassell's earlier Chess II. Its computer chess play is very strong against the program, which can be programmed to respond at various levels. The higher the level, the longer Oric takes to play its next move. Although some may find 3 seconds to 3 hours, in Chess II you may change the level during play and then change back.

Various options are available. To allow a particular problem to be entered, the board may be set up in a predetermined pattern.

The game may be saved on tape for future continuation and if you have a printer, the moves can be produced on hard copy.

Another option is to set up a new board, which allows you to move the board around and the new board may be set in a fairly rapid window refresh, but of course you can turn it off.

I was not very impressed with the screen display and found some of the symbols on the board to be a little difficult to read, but if you really are moving on with a friend, give it a try.

instructions	95%
value for money	75%
display	50%
value for money	70%

★★★★

## Thoyran Warlock/ Destroy Base X TI-99/4A £5.99

Price: 20 Marlowe Rd, Broomfield, Essex, SS10 7JL

There are two programs in the defense class of our computer Destroy Base X, it is a game of two players and the better it's not only a game, but a puzzle. It's not only a game, but a puzzle. It's not only a game, but a puzzle.

In general, the game program, The Thoyran Warlock is an old game for the unimpaired TI-99/4A. It is a game of two players and the better it's not only a game, but a puzzle. It's not only a game, but a puzzle.

Remembering how to use the game is a puzzle. It's not only a game, but a puzzle. It's not only a game, but a puzzle.

instructions	95%
graphics	75%
value for money	50%

★★★★

# Find the key, solve the mystery

Keys, spells, treasure — all must be located before these games are resolved. Join the adventure and start off on the quest

## Danger Ranger Atari £8

Price: 41 Truro Rd, St Austell, Cornwall PL26 3JL

Danger Ranger is one of the best games I have seen in a long time. It's a real challenge. It's a real game.

Danger Ranger is a game of two players and the better it's not only a game, but a puzzle. It's not only a game, but a puzzle.

★★★★

most of your time about getting on the floor of the first level. Thank goodness for the program. It's a real game.

The game is played with the joystick and you have the option of one or two-player game. It's a real game.

instructions	95%
graphics	75%
value for money	50%

★★★★

## Lionel and the Ladders TI-99/4A £7.95

Price: 100, Totten Park, Newmarket Rd, Cambridge

Another program captured? The good old Lionel and the Ladders. It's a game of two players and the better it's not only a game, but a puzzle.

Controlled through the walls are the ladders. It's a game of two players and the better it's not only a game, but a puzzle.

All ladders are controlled by the joystick and you have the option of one or two-player game. It's a real game.

Lionel and the Ladders is a game of two players and the better it's not only a game, but a puzzle. It's not only a game, but a puzzle.

instructions	95%
graphics	75%
value for money	50%

★★★★

**Tel: 0344 427317**

**AUTOMANIA**



**WALLY WEEK**

*is here!*

**FOR COMMODORE 64 AND 48K SPECTRUM**

# CHARTBUSTERS

## BRITAIN'S SOFTWARE CHARTS

by TONY COOPER

### ARCADE

- |                    |                     |             |
|--------------------|---------------------|-------------|
| 1 Jet Set Willy    | Software Projects   | Spectrum 48 |
| 2 Salvo Attack     | Soft-Image          | Spectrum 48 |
| 3 Fighter Fleet    | Optical Integration | Spectrum 48 |
| 4 Break-Head       | US Gold             | Com 64 15   |
| 5 Commando Culture | Imagine             | Com 64 15   |
| 6 Avenger          | Bug Byte            | Spectrum 48 |
| 7 Jet Pilot        | PSI                 | Spectrum 48 |
| 8 Prophet          | Beyond              | Spectrum 48 |
| 9 Conquest         | Golden              | Com 64 15   |
| 10 Tridonian       | Open Generation     | Spectrum 48 |

### NON-ARCADE

- |                    |           |             |
|--------------------|-----------|-------------|
| 1 Muffy            | Endhouse  | Spectrum 48 |
| 2 G.A.F. 64        | Adrenalin | Spectrum 48 |
| 3 Mighty Pathz 787 | Amiga     | Com 64 15   |
| 4 Snooker          | Visions   | Com 64 15   |
| 5 Fall of Rome     | APS       | Spectrum 48 |
| 6 Fall of Rome     | APS       | Com 64 15   |
| 7 Solo Flight      | US Gold   | Com 64 15   |
| 8 Twin Kingdom     | Bug Byte  | Com 64 15   |
| 9 Clanks Adventure | CDI       | Com 64 15   |
| 10 Workmaster      | Omni Apps | Spectrum 48 |

Compiled with the assistance of Britain's leading software distributors, including: Pinnacle, SDL, FGS, Websters, FGS and Software Centre.

### SPECTRUM

- |                    |                   |             |
|--------------------|-------------------|-------------|
| 1 Jet Set Willy    | Software Projects | Spectrum 48 |
| 2 Salvo Attack     | Soft-Image        | Spectrum 48 |
| 3 Fighter Fleet    | Optical           | Spectrum 48 |
| 4 Break-Head       | US Gold           | Com 64 15   |
| 5 Commando Culture | Imagine           | Com 64 15   |
| 6 Avenger          | Bug Byte          | Spectrum 48 |
| 7 Jet Pilot        | PSI               | Spectrum 48 |
| 8 Prophet          | Beyond            | Spectrum 48 |
| 9 Conquest         | Golden            | Com 64 15   |
| 10 Tridonian       | Open Generation   | Spectrum 48 |

### COMMODORE 64

- |                    |                   |             |
|--------------------|-------------------|-------------|
| 1 Jet Set Willy    | Software Projects | Spectrum 48 |
| 2 Salvo Attack     | Soft-Image        | Spectrum 48 |
| 3 Fighter Fleet    | Optical           | Spectrum 48 |
| 4 Break-Head       | US Gold           | Com 64 15   |
| 5 Commando Culture | Imagine           | Com 64 15   |
| 6 Avenger          | Bug Byte          | Spectrum 48 |
| 7 Jet Pilot        | PSI               | Spectrum 48 |
| 8 Prophet          | Beyond            | Spectrum 48 |
| 9 Conquest         | Golden            | Com 64 15   |
| 10 Tridonian       | Open Generation   | Spectrum 48 |

### DRAGON 32

- |                    |                   |             |
|--------------------|-------------------|-------------|
| 1 Jet Set Willy    | Software Projects | Spectrum 48 |
| 2 Salvo Attack     | Soft-Image        | Spectrum 48 |
| 3 Fighter Fleet    | Optical           | Spectrum 48 |
| 4 Break-Head       | US Gold           | Com 64 15   |
| 5 Commando Culture | Imagine           | Com 64 15   |
| 6 Avenger          | Bug Byte          | Spectrum 48 |
| 7 Jet Pilot        | PSI               | Spectrum 48 |
| 8 Prophet          | Beyond            | Spectrum 48 |
| 9 Conquest         | Golden            | Com 64 15   |
| 10 Tridonian       | Open Generation   | Spectrum 48 |

Compiled by W. H. Smith and Websters. Figures in brackets are last week's positions.

### VIC-20

- |                    |                   |             |
|--------------------|-------------------|-------------|
| 1 Jet Set Willy    | Software Projects | Spectrum 48 |
| 2 Salvo Attack     | Soft-Image        | Spectrum 48 |
| 3 Fighter Fleet    | Optical           | Spectrum 48 |
| 4 Break-Head       | US Gold           | Com 64 15   |
| 5 Commando Culture | Imagine           | Com 64 15   |
| 6 Avenger          | Bug Byte          | Spectrum 48 |
| 7 Jet Pilot        | PSI               | Spectrum 48 |
| 8 Prophet          | Beyond            | Spectrum 48 |
| 9 Conquest         | Golden            | Com 64 15   |
| 10 Tridonian       | Open Generation   | Spectrum 48 |

### BBC

- |                    |                   |             |
|--------------------|-------------------|-------------|
| 1 Jet Set Willy    | Software Projects | Spectrum 48 |
| 2 Salvo Attack     | Soft-Image        | Spectrum 48 |
| 3 Fighter Fleet    | Optical           | Spectrum 48 |
| 4 Break-Head       | US Gold           | Com 64 15   |
| 5 Commando Culture | Imagine           | Com 64 15   |
| 6 Avenger          | Bug Byte          | Spectrum 48 |
| 7 Jet Pilot        | PSI               | Spectrum 48 |
| 8 Prophet          | Beyond            | Spectrum 48 |
| 9 Conquest         | Golden            | Com 64 15   |
| 10 Tridonian       | Open Generation   | Spectrum 48 |

### ZX81

- |                    |                   |             |
|--------------------|-------------------|-------------|
| 1 Jet Set Willy    | Software Projects | Spectrum 48 |
| 2 Salvo Attack     | Soft-Image        | Spectrum 48 |
| 3 Fighter Fleet    | Optical           | Spectrum 48 |
| 4 Break-Head       | US Gold           | Com 64 15   |
| 5 Commando Culture | Imagine           | Com 64 15   |
| 6 Avenger          | Bug Byte          | Spectrum 48 |
| 7 Jet Pilot        | PSI               | Spectrum 48 |
| 8 Prophet          | Beyond            | Spectrum 48 |
| 9 Conquest         | Golden            | Com 64 15   |
| 10 Tridonian       | Open Generation   | Spectrum 48 |







# Voyage into the Unknown at HMV for 1.99.

Take a trip to HMV and you'll find yourself in the world of Spectipedes, Gnashers and Bionic Grannies.

Just some of the many Mastertronic computer games now available at your nearest HMV shop.

All for only 1.99.

## **Spectrum**

Voyage Into The  
Unknown (48K)

Bullseye (48K)

Tank Trax (48K)

Gnasher (All)

Spectipede (All)

Electron (48K)

Rifle Range (All)

## **Commodore 64**

Duck Shoot

Vegas Jackpot

Squirm

Space Walk

BMX Racers

Jungle Story

Bionic Granny

## **Munch Mania**

Hektik

Sub Hunt

The Election Game

## **VIC 20**

Duck Shoot

Vegas Jackpot

Phantom Attack

Sub Hunt



**More records. More tapes.  
More discounts.**

# Don't strain your eyes!

Make your text easier to read with this useful program for enlarging letter sizes. Shingo Suglura, HCW regular, has written this utility to save your eyesight

**How it works**  
 10-20 BASIC statements  
 20 call the procedure which enlarges all machine code  
 40 call MODER on line, this utility works in any mode  
 70-100 your program in double height  
 100 end of program  
 120-150 procedure which prints string in double height  
 160 move cursor to specified location  
 180 call machine code routine to print string in double height  
 200-250 your program in double height  
 260 call machine code routine to print string in double height  
 280-300 your program in double height  
 310-350 your program in double height  
 360-400 your program in double height  
 410-450 your program in double height  
 460-500 your program in double height  
 510-550 your program in double height  
 560-600 your program in double height  
 610-650 your program in double height  
 660-700 your program in double height  
 710-750 your program in double height  
 760-800 your program in double height  
 810-850 your program in double height  
 860-900 your program in double height  
 910-950 your program in double height  
 960-1000 your program in double height

MODER and MODER are also used for games or other programs because they offer a wide range of colours. However, because their screen format is 20 x 70, the characters are rather small and difficult to read.

I decided that if I made them double height, they would be much easier to read.

A few double height character printers have been published before, but they were usually written in BASIC and were, as a consequence, very slow. So I decided to write in assembly language but I made the utility so that the machine code is called from a procedure and that way so on.

To use the double height utility in your own programs, you must type in lines 120 to 160. Alternatively you can modify it on top of your program if you have already compiled it and saved it (see BBC user guide page 402 on how to merge programs).

You can call PROCdouble from anywhere in your program in the form: PROCdouble string, a procedure, a coordinate where string is the character you want to print at the cursor position a coordinate. Remember that the character take up one row and the procedure will also double characters 234 and 235 if it is single or double.

The demo lines 70-100 illustrates just how fast the procedure is. The string is printed on the screen almost instantly and that can be used in your instructions if you wish.

**Variables**  
 code: space for machine code  
 move: space for information to character  
 string: entered program string  
 code: and end of machine code routine

```

10 REM Double height utility
20 REM By Shingo Suglura
30 REM
40
50 PROCdouble
60 PROCdouble
70 PROCdouble "CODE COMPUTED" 2,40
80 PROCdouble "PRESS P" 2,120
90 PROCdouble "FOR 40" 2,120
100 PROCdouble "FOR 40" 2,120
110 END
120 DEFPROCdouble (string, x, y, y2)
130 PRINT string, y, y2
140 GOTO double height
150 ENDPROC
160 DEFPROCdouble
170 GOTO code 200, 100, 10
180 GOTO code 200, 100, 10
190 GOTO code 200, 100, 10
200 GOTO code 200, 100, 10
210 GOTO code 200, 100, 10
220 GOTO code 200, 100, 10
230 GOTO code 200, 100, 10
240 GOTO code 200, 100, 10
250 GOTO code 200, 100, 10
260 GOTO code 200, 100, 10
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820 GOTO code 200, 100, 10
830 GOTO code 200, 100, 10
840 GOTO code 200, 100, 10
850 GOTO code 200, 100, 10
860 GOTO code 200, 100, 10
870 GOTO code 200, 100, 10
880 GOTO code 200, 100, 10
890 GOTO code 200, 100, 10
900 GOTO code 200, 100, 10
910 GOTO code 200, 100, 10
920 GOTO code 200, 100, 10
930 GOTO code 200, 100, 10
940 GOTO code 200, 100, 10
950 GOTO code 200, 100, 10
960 GOTO code 200, 100, 10
970 GOTO code 200, 100, 10
980 GOTO code 200, 100, 10
990 GOTO code 200, 100, 10
1000 GOTO code 200, 100, 10

```

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# SABRE WOLF



THE GREEN  
JANBY DE LA TOUCH  
LEICESTERSHIRE LEA 640

48K SINCLAIR ZX SPECTRUM  
**£9.95**



# Will you survive the holocaust?



**Defend yourself against the anti-matter clones and be prepared for the supernova — when the sun explodes and frazzles everything in range. Great graphics in this game by A.J. Cooney**

## Death Wish

Take care when playing in the high-score contest, as it also opens up the random trigger for the supernova — when the sun explodes — on turn 100 and 101.

There are several of these triggers in this game. Look out for them: If you get one wrong, the game will end.

The ship repair sequence is at lines 100-100. Don't be tempted to try and loop back to the original start sequence at line 200-200. It might save you time trying but it will corrupt your game and cost some important variables.

Once the use of random anti-matter and radio itself is the super-charge sequence. This allows you to put your own course of foot on the supernova. Use a 470 gold quantity tape and record supernova in the first pass. Check it is there and take you can see the use to record supernova. Cross the record of the supernova according to your imagination.

Once the game is loaded and running it will follow the game through on the TV. You will have an explosive every time you are caught by a supernova and the ship runs out.

If you want to play it fully record your game on both sides of the tape so that if a clone runs you can replace it and reverse it.

Use a loop to leave the play location beyond your screen to go the sounds through to the TV monitor.

The story to tell. For five generations the war against alien forces from the Andromeda galaxy waged Earth finally won the victory, but at an enormous cost to human life.

As a final act of rage the aliens created a clone which had the power to reproduce itself. This two clones head towards the sun with three cargo of anti-matter bombs, up a last ditch attempt to win the war.

This is where you come in. Only one cloning is left on earth after the latter struggle. You must control that and use it to save the world. Meanwhile a fleet of ships is escaping towards the edge of the system power which you need for your fleet, and your stage of the gradually begins.

Try to destroy more ships each stage does attack, otherwise they will cause the sun to

explode and your whole fleet will be vaporized. If you can make the jump to light speed. You must decide whether to operate Code 1 or Code 2. Code 1 transfers all power to your shields as an effort to protect yourself, and Code 2 sheds the shields, shifting power to enable you to make the jump to light speed.

The choice is yours. Stay where you are and pass your shields will withstand the onslaught, or let the sun's thermal and make a bet for the end of the galaxy.

The solar system. They are counting on your preferences.

The choice is yours to pursue the escaping earthlings. You must protect them, getting gas and tracking the loss. If they make contact with your ship they will make a Kipper want to be made during the battle by your onboard computer system.

## How it works

- 24-100: ship computer and its functions
- 110: no effect
- 120-130: video page for graphics
- 140-200: game in display
- 210: no effect
- 220-230: ship border line, ship, make move, etc, put stars in sky
- 240: gas alarm on screen
- 250-260: random triggering event for clone
- 270-280: check keyboard status and fix gas including in 270-280 trigger system line
- 290-300: video random, including a 270 random trigger for continuing tracks
- 310: clone control
- 320-330: check and gas move, 340-350: then high score trigger sequence in 330
- 360-370: repair monitor
- 380-390: supernova
- 400-410: supernova
- 420: random for survival
- 430-440: sun survival and trigger system
- 450-460: survival and display control

```

100 GOTO195B
110 DIMH(8,B),DIME(12,B),DIME(12,B),DIME(12,B),DIME(12,B),DIME(12,B),L2(8,B),L3(8,B),L4(8,B),
    L5(8,B)
120 PROB04,1
130 SCREEN3,1
140 POLE4
150 GET11,11-18,B,1,2
160 GOTO194B
170 FORK153A,24:FORK153A+32,24:FORK153A+64,24:FORK153A+96,153:FORK153A+128,153:FORK153A+160,153:FORK153A+192,153:FORK153A+224,153
180 GET11,11-18,B,1,A
190 POLE
200 FORK153A,68:FORK153A+32,126:FORK153A+64,230:FORK153A+96,126:FORK153A+128,126
    :FORK153A+160,126:FORK153A+192,68:FORK153A+224,76
210 GET18,B,1-18,B,1,B
220 FORK153A,68:FORK153A+32,24:FORK153A+64,68:FORK153A+96,126:FORK153A+128,230:FORK153A+160,230:FORK153A+192,68:FORK153A+224,76
    
```

## DRAGON PROGRAM

[illegible]

# DRAGON PROGRAM

```

834 PHORE9,1:SCORE99,1:CLS
844 IF (SCORE>H1) THEN H1=SCORE
854 PRINT" *****SUPERNOVA*****"
864 PRINT:PRINT:PRINT:PRINT" YOUR SCORE="SCORE
874 PRINT:PRINT" HIGH SCORE="H1
884 FORTL:=1:GOTO884:NEXT
894 IF SCORE<H1 THEN GOTO1444
904 PRINT:PRINT:PRINT" PRESS enter TO PLAY AGAIN"
914 FORTL:=1:GOTO884:NEXT
924 G= "" :G=INKEY$: IF G<>"Q" THEN G1: THEN G2$
934 SCORE=0:AL=0:GOTO1444
944 FOR I=1534,0:POKE1534+32,124:POKE1534+64,44:POKE1534+96,94:POKE1534+128,32:POKE1534+160,44:POKE1534+192,124:POKE1534+224,0
954 GET(1,1)-10,0,1,1
964 FORTL
974 FOR I=1534,0:POKE1534+32,0:POKE1534+64,124:POKE1534+96,44:POKE1534+128,64:POKE1534+160,44:POKE1534+192,124:POKE1534+224,0
984 GET(1,1)-10,0,0,1,1
994 FOR I=1534,0:POKE1534,0:POKE1548,0:POKE1548,154:POKE1532,64:POKE1544,64:POKE1576,64:POKE1576,124:POKE1544,0
1004 GET(1,1)-10,0,0,1,1
1014 FOR I=1534,0:POKE1540,0:POKE1540,174:POKE1532,64:POKE1544,124:POKE1576,64:POKE1576,124:POKE1544,0
1024 GET(1,1)-10,0,1,1,1
1034 FOR I=1534,0:POKE1548,0:POKE1548,124:POKE1532,64:POKE1544,124:POKE1576,64:POKE1576,124:POKE1544,0
1044 GET(1,1)-10,0,1,1,1
1054 GOTO174
1064 REM==INSTRUCT DONG==
1074 CLS:PRINT64," ***** SUPERNOVA *****";PRINT128,"ASSEMBLED FOR THE DRAGON 602/64";PRINT256,"BY A. J. COONEY.";PRINT512,"10-8-84"
1084 PRINT:PRINT" PRESS space TO PLAY";
1094 FORT=1:GOTO884:STEP25: SOUND1,2:NEXT
1104 G= "" :G=INKEY$: IF G<>" " THEN G1$
1114 SOUND128,2
1124 CLS:PRINT"ALIENS ARE ATTACKING THE SHIP";PRINT:PRINT" YOUR ON THE STARCH IF SCORE YOUR MISSION IS TO HOLD THEM OFF"
1134 PRINT" SO THE SURVIVORS OF EARTH CAN ESCAPE IN THEIR FLEET OF SHIPS"
1144 PRINT:PRINT" warning "
1154 PRINT:PRINT"ONLY TEN ALIENS HAVE TO PASS YOU TO DESTROY THE UNDEFENDED FLEET"
1164 PRINT:PRINT:PRINT" PRESS ANY KEY TO CONTINUE"
1174 G=INKEY$
1184 PRINT256,"WARNING":FOR DL=1 TO 100:PRINT256,"warning":FOR DL=1 TO 100:PRINT
1194 IF G<>" " THEN G1$
1204 SOUND128,2
1214 CLS
1224 PRINT" ***** SUPERNOVA *****"
1234 PRINT:PRINT:PRINT" USE ARROW KEYS TO CONTROL"
1244 PRINT" MOVEMENT AND SPACE TO FIRE"
1254 PRINT" THE LATER FROM YOUR SHIP"
1264 PRINT:PRINT" THERE ARE TWO TYPES OF ALIEN,"
1274 PRINT"ONE SCORES MORE THAN THE OTHER."
1284 PRINT:PRINT" THE ALIENS ARE WORTH MORE THN"
1294 PRINT" MANKS THEY ARE TO YOUR SHIP."
1304 PRINT:PRINT" PRESS SPACE TO CONTINUE"
1314 G= "" :G=INKEY$: IF G<>" " THEN G1$
1324 CLS:SOUND128,2
1334 PRINT"YOU MUST BETTER YOUR SCORE EACH TIME"
1344 PRINT:PRINT:PRINT"IF YOU DONT THE SUN WILL TURN *****SUPERNOVA*****"
1354 PRINT"each game is of RANDOM DURATION"
1364 PRINT:PRINT"ENTER CODE1002 AND THEIR IS"
1374 PRINT"A REMOTE CHANCE OF SURVIVING"
1384 PRINT:PRINT"PRESS space TO CONTINUE"
1394 G= "" :G=INKEY$: IF G<>" " THEN G1$
1404 SOUND128,2

```

## DRAGON PROGRAM

[illegible]











WORD SEARCH APRIL 1984

BY R.A. HOUTON

```

100 REM INITIALISATION ROUTINE
110 PRINT TAB 11;"WORDSEARCH"
120 PRINT TAB 11;"*****"
130 PRINT : PRINT "THIS PROGRAM WILL ALLOW YOU TO"
140 PRINT : PRINT "FIND ANY KNOWN WORD IN A WORD-": PRINT : PRINT "SEARCH MATRIX"
150 PRINT : PRINT "START BY PRESS"
160 PRINT : PRINT "MAKING A COUNT OF THE ROWS OFROW": PRINT : PRINT "TOP TO BOT"
170 PRINT : PRINT "TOM AND THEN OF THE"
180 PRINT : PRINT "COLUMN (SIDE TO SIDE). ENTER": PRINT : PRINT "THESE NUMBERS"
190 PRINT : PRINT "AS PROMPTED AND"
200 PRINT : PRINT "THEN THE MATRIX ROW BY ROW": PRINT : PRINT "PRESS ANY KEY TO"
210 PRINT : PRINT "CONTINUE"
220 PAUSE 5
230 REM SET OWN'S LOCK ON
240 POKE 25400,0
250 REM SET UP & ENTER MATRIX
260 INPUT "HOW MANY ROWS?";R
270 INPUT "HOW MANY COLUMNS?";C
280 CLS : LET C=0 : DIM A(R,C)
290 FOR I=1 TO C+1 STEP 1
300 INPUT "ROW ";(C+1) : "COLUMN ";(I) : " "
310 PRINT TAB INT ((C+1)/2);A(I) TO (C+1)
320 LET C=C+1
330 NEXT I
340 REM ENTER REQUIRED WORD
350 INPUT "WHAT WORD DO YOU WANT TO FIND? ";W
360 PRINT : PRINT TAB 7;"SEARCHING FOR": PRINT TAB INT ((C+1)/2);W : PRINT
370 PRINT "PLEASE WAIT"
380 REM INITIALISE VARIABLES
390 DIM COL=0
400 LET ROW=0 : LET COL=0
410 REM MAIN SEARCH ROUTINE
420 FOR I=1 TO LEN W
430 REM ROW AND COLUMN COUNTER
440 IF COL=C+1 THEN LET ROW=ROW+1

```

# Words and m grow

of prompts to enter yellow values for ROW and COLUMN and values for FLASH and POINT AT. Then you will be asked to enter the character you wish to be displayed. The program will display both upper and lower case letters, numbers and most of the other keyboard characters.

Now is the time for expert assistance. Mistakes can be corrected by using PRINT AT with the correct entry.

When you have gained confidence with the program you can try SAVING the screen for use in your own program. The method is as follows.

You will first need a short

loading program such as

```

10 LOAD "PIC" SCREEN
20 LOAD "your program name"

```

SAVE the program using SAVE "loader" LINE 10. This will ensure an auto start on reloading.

When the OK message is shown, stop the tape. Do NOT REWIND. Remove the tape from the recorder and load your screen display program. Compare your screen and then accept the SAVE option.

When the Start Tape message appears, replace your tape with the loader program and the

recorder and SAVE the screen display. Use the same procedure to SAVE your own program on to the main tape. When you load this tape using LOAD or LOAD "loader", you will see a very short normal loading sequence followed by your screen display loading up on the screen.

Notice how the display builds up. This will give you a clue to how the screen is stored in the Spectrum's memory.

The program tends to run a little slowly and I am not suggesting this is the best or only way of solving this problem. Perhaps you can find a better way if you can, then

why not try PCW tape?

One final hint, with PRINT AT 0,0 you can enter all 176 characters allowed as one entry. However, because of storing a large number of characters if you have already got something on the screen. The danger here is that the screen will scroll and you may lose the tops of characters printed on the top row.

## How it works

10-90 instructions

100-170 upper part matrix

180-230 set up array W

240-260 position in WORD also array to be used

280 find first character

400-470 increment row and column

480-470 row or column option

490-550 returning to push and the is in AS, direct to sub-routine and accurate find

560-590 POINT value of R into two-dimensional array

600-630 returning building value of R to form final value of R

# SPECTRUM PROGRAMS

```

310 IF COL=H+1 THEN LET COL=1
320 REM LOOKS FOR FIRST LETTER MATCH BETWEEN B# AND A# ON C# AND IF FOUND DI
RECT PROGRAM TO SUBROUTINE
330 IF A#(1) TO I+1<B#(1) TO J) THEN GO TO 370
340 LET COL=COL+1
350 NEXT I
360 REM DISPLAYS THE PROGRAM TO THE "NOT FOUND" MESSAGE
370 GO TO 1310
380 REM CHECKS MATRIX LIMITS HORIZONTALLY LEFT TO RIGHT
390 IF COL+LEN B#-1>B THEN GO TO 430
400 REM LOOKS FOR SECOND LETTERMATCH BETWEEN A# AND B#
410 IF A#(1+1) TO I+1<B#(1+1) TO J) THEN GO TO 450
420 REM IF FULL MATCH BETWEEN A# AND B# IS FOUND THEN PRINTS POSITION AND DIS
SECTION
430 IF A#(1) TO I+LEN B#-1=B# THEN PRINT : PRINT B#; PRINT "IS AT ROW "I;ROW;"
COLUMN "J;COL; PRINT "READING HORIZONTALLY FROM LEFT TO RIGHT"; GO TO 1340
440 REM CHECKS MATRIX LIMITS HORIZONTALLY RIGHT TO LEFT
450 IF COL-LEN B#+1<1 THEN GO TO 570
460 REM AS LINE 400
470 IF A#(1-1) TO I-1<B#(1-1) TO J) THEN GO TO 570
480 REM FORMS C# FROM MATRIX
490 LET D=0
500 FOR J=1 TO LEN B#
510 LET C#(J) TO J+A#(1-1) TO I
520 LET D=D+1
530 NEXT J
540 REM AS LINE 420
550 IF C#=B# THEN PRINT : PRINT B#; PRINT "IS AT ROW "I;ROW;" COLUMN "J;COL; PRI
NT "READING HORIZONTALLY FROM RIGHT TO LEFT"; GO TO 1340
560 REM CHECKS MATRIX LIMITS VERTICALLY DOWNWARDS
570 IF A-ROW+1<LEN B# THEN GO TO 690
580 REM AS LINE 400
590 IF A#(1) TO I+B#(1-1) TO J) THEN GO TO 690
600 REM FORMS C# FROM MATRIX
610 LET D=0
620 FOR J=1 TO LEN B#
630 LET C#(J) TO J+A#(1-1) TO I+B#(1-1) TO J+B#
640 LET D=D+B#
650 NEXT J
660 REM AS LINE 420
670 IF C#=B# THEN PRINT : PRINT B#; PRINT "IS AT ROW "I;ROW;" COLUMN "J;COL; PRI
NT "READING VERTICALLY DOWNWARDS "; GO TO 1340
680 REM CHECKS MATRIX LIMITS VERTICALLY UPWARDS
690 IF ROW+LEN B# THEN GO TO 810
700 REM AS LINE 400
710 IF A#(1) TO I+B#(1-1) TO J) THEN GO TO 810
720 REM FORM C# FROM MATRIX
730 LET D=0
740 FOR J=1 TO LEN B#
750 LET C#(J) TO J+A#(1-1) TO I+B#(1-1) TO J+B#
760 LET D=D+B#
770 NEXT J
780 REM AS LINE 420
790 IF C#=B# THEN PRINT : PRINT B#; PRINT "IS AT ROW "I;ROW;" COLUMN "J;COL; PRI
NT "READING VERTICALLY UPWARDS "; GO TO 1340
800 REM CHECKS MATRIX LIMITS DIAGONALLY UPWARDS FROM RIGHT TO LEFT
810 IF COL-LEN B#+1<1 OR ROW+LEN B# THEN GO TO 930
820 REM AS LINE 400
830 IF A#(1) TO I+B#(1-1) TO J+B#(1-1) TO J) THEN GO TO 930
840 REM FORMS C# FROM MATRIX
850 LET D=0
860 FOR J=1 TO LEN B#
870 LET C#(J) TO J+A#(1-1) TO I+B#(1-1) TO J+B#
880 LET D=D+B#
890 NEXT J
900 REM AS LINE 420
910 IF C#=B# THEN PRINT : PRINT B#; PRINT "IS AT ROW "I;ROW;" COLUMN "J;COL; PRI
NT "READING DIAGONALLY UPWARDS FROM RIGHT TO LEFT "; GO TO 1340

```

# SPECTRUM PROGRAMS

```

930 REM CHECKS MATRIX LIMITS    DIAGONALLY UPWARDS FROM LEFT    TO RIGHT
935 IF COL+LEN BA-1<0 OR ROW+LEN BA THEN G TO 1000
940 REM AS LINE 400
950 IF A(1)+B+1 TO 1+B+1<A+2 TO 2 THEN GO TO 1000
960 REM FORMS CA FROM MATRIX
970 LET D=B
980 FOR J=1 TO LEN BA
990 LET C(1) TO J=A(1)+B TO 1+B
1000 LET D=D+B-1
1010 NEXT J
1020 REM AS LINE 420
1030 IF C=BA THEN PRINT : PRINT BA: PRINT "IS AT ROW ",ROW," COLUMN ",COL: PR
INT "READING DIAGONALLY UPWARDS FROM LEFT TO RIGHT": GO TO 1340
1040 REM CHECKS MATRIX LIMITS    DIAGONALLY DOWNWARDS FROM LEFT TO RIGHT
1050 IF COL+LEN BA-1<0 OR A-ROW+1<LEN BA THEN GO TO 1370
1060 REM AS LINE 400
1070 IF A(1)+B+1 TO 1+B+1<A+2 TO 2 THEN GO TO 1370
1080 REM FORMS CA FROM MATRIX
1090 LET D=B
1100 FOR J=1 TO LEN BA
1110 LET C(1) TO J=A(1)+B+1 TO 1+B
1120 LET D=D+B+1
1130 NEXT J
1140 REM AS LINE 420
1150 IF C=BA THEN PRINT : PRINT BA: PRINT "IS AT ROW ",ROW," COLUMN ",COL: PR
INT "READING DIAGONALLY DOWNWARDS FROM LEFT TO RIGHT": GO TO 1340
1160 REM CHECKS MATRIX LIMITS    DIAGONALLY DOWNWARDS FROM RIGHT TO LEFT
1170 IF COL+LEN BA-1<1 OR A-ROW+1<LEN BA THEN GO TO 1370
1180 REM AS LINE 400
1190 IF A(1)+B-1 TO 1+B-1<A+2 TO 2 THEN GO TO 1370
1200 REM FORMS CA FROM MATRIX
1210 LET D=B
1220 FOR J=1 TO LEN BA
1230 LET C(1) TO J=A(1)+B TO 1+B
1240 LET D=D+B-1
1250 NEXT J
1260 REM AS LINE 420
1270 IF C=BA THEN PRINT : PRINT BA: PRINT "IS AT ROW ",ROW," COLUMN ",COL: PR
INT "READING DIAGONALLY DOWNWARDS FROM RIGHT TO LEFT": GO TO 1340
1280 REM DIRECTS PROGRAM BACK TOWARD ROUTINE IF NO MATCH BETWEEN CA OR CB IS FOUN
D
1290 GO TO 340
1300 REM "NOT FOUND" MESSAGE
1310 PRINT : PRINT "    SORRY, UNABLE TO FIND"
1320 PRINT : PRINT TAB INT (132-LEN BA)/2;BA
1330 REM GREAT WORDSEARCH
1340 PRINT : PRINT "ANOTHER WORD? Y FOR YES N FOR NO"
1350 IF SKEY$="Y" THEN GO TO 1300
1360 REM SAVE MATRIX OPTION
1370 IF SKEY$="N" THEN PRINT : PRINT "DO YOU WISH TO SAVE THE MATRIX? PLEASE E
NTER Y FOR YES N FOR NO": GO TO 1470
1380 REM DAYS LOCK ON FOR AUTO START AFTER SAVING MATRIX
1390 FREE STORAGE
1400 REM SET UP MATRIX FOR    REPEAT WORDSEARCH
1410 GOS
1420 FOR I=1 TO LEN AA STEP 5
1430 PRINT TAB INT (132-80/2);BA(1) TO (1+B-1)
1440 NEXT I
1450 GO TO 320
1460 REM SAVE OR STOP OPTION
1470 INPUT CA
1480 IF CA="N" THEN PRINT : PRINT TAB 4;"GOOD LUCK AND GOODBY": STOP
1490 SAVE "WORDSEARCH" LINE 1370

```

# SPECTRUM PROGRAMS

BOXED QUADRIPLY SIZED LETTERS

BY R.A. HAMILTON

MAY 1984

ON CLS : PRINT AT 6,8;"THIS PROGRAM ALLOWS YOU TO PRETYPE/TYPE UP THREE THE NORMAL DIMENSIONS AND THEN TO SAVE THE DISPLAY ON TAPE. IT WILL PRINT BOTH THE UPPER AND LOWER CASE LETTERS, NUMBERS AND MOST OF THE SYMBOLS ON AN 81x14 GRID IN CONTRAST TO THE NORMAL 32x32 SPECTRUM GRID"

ON PRINT : PRINT " YOU WILL ALSO BE ASKED TO SPECIFY THE PAPER, INK AND FLASH VALUES YOU WISH TO HAVE PRINTED. PRESS ANY KEY TO SEE THE GRID DIMENSIONS": PAUSE 8

ON CLS : FOR I=8 TO 255 STEP 16: PLOT I,8: DRAW 8,170: NEXT I

FOR I=8 TO 170 STEP 16: PLOT 8,I: DRAW 255,8: NEXT I

ON PLOT 255,8: DRAW 8,170: PLOT 8,170: DRAW 255,8

40 LET A=8: FOR I=2 TO 38 STEP 2: PRINT AT I,14: LET A=A+1: NEXT I

70 LET A=8: FOR I=8 TO 28 STEP 2: PRINT AT I,14: LET A=A+1: NEXT I

80 PRINT AT 2,7;"X CO-ORDINATES": LET X="X COORDINATES": FOR I=4 TO 17: PRINT AT I,3;"X=I-3 TO I-3+1": NEXT I

90 PRINT AT 18,8;"PRESS ANY KEY TO": AT 11,12:"CONTINUE": PAUSE 8: CLS

100 LET A=15368: DIM B(18,8)

110 INPUT "PAPER, 16 TO 71": U: IF U=8 OR U=7 THEN GO TO B160

120 INPUT "INK, 08 TO 71": V: IF V=8 OR V=7 THEN GO TO B200

130 INPUT "FLASH, 16 OR 32": R: IF R=8 OR R=32 THEN GO TO B100

140 INPUT "PRINT AT X CO-ORD": S: IF S=8 OR S=18 THEN GO TO B160

150 INPUT "PRINT AT Y CO-ORD": T: IF T=8 OR T=12 THEN GO TO B100

160 LET N=240: LET P=0

170 INPUT "WORD": C

180 FOR S=1 TO LEN C

190 LET A=C(S) TO G

200 LET C=C&A

210 LET S=S+C&A

220 FOR I=8 TO 7

230 LET L=POKE (I\*8)

240 FOR J=8 TO 11 STEP -1

250 LET B(I+1)(J)=I\*8+J+INT (L/256)

260 LET L=INT (L/256)

270 NEXT J

280 NEXT I

290 FOR I=1 TO 8

300 NEXT J

310 LET S=1: LET P=1: LET B=144

320 GO SUB B400

330 LET S=S+1: LET P=P+1: LET B=144

340 GO SUB B400

350 LET S=S+1: LET P=P+1: LET B=144

360 GO SUB B400

370 LET S=S+1: LET P=P+1: LET B=144

380 GO SUB B400

390 PRINT PAPER U: INC V: FLASH R: AT N,P:CHR 144:AT N,P+1:CHR 140:AT N+1,P:CHR

144:AT N+1,P+1:CHR 147

400 LET P=P+2

410 IF P=32 THEN LET P=8: LET N=N+2

420 IF N=22 THEN GO TO B440

430 NEXT S

440 INPUT "CONTINUE/SAVE? ENTER C OR S": D

450 IF D="C" OR D="c" THEN GO TO B100

460 SAVE "PIC-SCREEN"

470 PRINT "SCREEN SAVED TO CONTINUE ENTER RUN": STOP

480 LET H=8: LET K=8: LET M=8

490 FOR I=6 TO 8+3

500 FOR J=7 TO P+3

510 IF B(I+1)(J) TO J="1" THEN GO SUB B420

520 LET H=H+K

530 LET K=8

540 IF J=4 OR J=8 THEN GO TO B560

550 NEXT J

560 POKE USR ADDR G1=H,M

570 POKE USR ADDR G1=H+1,M

580 LET H=8

590 LET M=2

600 NEXT I

610 RETURN

620 IF J=1 OR J=5 THEN LET K=192

630 IF J=2 OR J=6 THEN LET K=48

640 IF J=3 OR J=7 THEN LET K=12

650 IF J=4 OR J=8 THEN LET K=3

660 RETURN





# Play it again, Sam

There's music in your house — even your Commodore 64 can't play an synthesiser-type keyboard with this program.

There are two main sections: the BASIC section and the machine code section.

The BASIC section defines the waveform and the machine code uses for keys being depressed and plays the appropriate note. Machine code is used here because of the slowness of BASIC.

Most of the 50's special features are available through this listing, including ring modulation, speech synthesis, and filter. Although the sound produced is only monophonic, there is an "attack" option which plays the note depressed and one as it starts to fade. As you will hear, the notes do sound much better.

Differences between are obtained by pressing CTRL, SHIFT or

**Make sweet music on your computer's keys. Transform your keyboard into a musical instrument with this program by R.F.A. Brown and play on**

```
0 CLR PRINT:GOTO 1000
10 S=54272:FOR L=8192 TO 65535:L=0:NEXT
50 INPUT "WAVEFORM".WVF
51 IF WVF="NOISE" THEN H=120:GOTO 55
52 IF WVF="PULSE" THEN H=64:GOTO 55
53 IF WVF="SIN" THEN H=32:GOTO 55
54 IF WVF="TRI" THEN H=16
55 IF WVF="PULSE" THEN H=8
56 INPUT "PULSE WIDTH (0-4095)".PW
57 IF PW<0 OR PW>4095 THEN PRINT "OUT OF RANGE":GOTO 56
58 IF WVF="NOISE" OR WVF="PULSE" OR WVF="SIN" OR WVF="TRI" THEN GOTO 68
59 PRINT "SORRY...NOT AVAILABLE":GOTO 58
```

## Keys used

0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
A  
B  
C  
D  
E  
F

111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
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60 IF WVF="TRI" THEN H=8
61 INPUT "RING MODULATION (Y/N)".RMS
62 IF RMS="Y" THEN H=H*4
63 INPUT "SYNCHRONISATION (Y/N)".SYN
64 IF SYN="Y" THEN H=H*2
65 IF RMS=0 THEN INPUT "MODULATION RATE (0-255)".MR
66 INPUT "ATTACK (0-15)".AT
67 IF AT<0 OR AT>15 THEN PRINT "OUT OF RANGE":GOTO 66
68 INPUT "DECAY (0-15)".DE
69 IF DE<0 OR DE>15 THEN PRINT "OUT OF RANGE":GOTO 68
70 INPUT "SUSTAIN (0-15)".SU
71 IF SU<0 OR SU>15 THEN PRINT "OUT OF RANGE":GOTO 68
72 INPUT "RELEASE (0-15)".RE
73 IF RE<0 OR RE>15 THEN PRINT "OUT OF RANGE":GOTO 68
74 INPUT "BAND PASS FILTER (Y/N)".BPF
75 IF BPF="Y" THEN H=H*32
76 INPUT "HIGH PASS FILTER (Y/N)".HPF
77 IF HPF="Y" THEN H=H*64
78 INPUT "LOW PASS FILTER (Y/N)".LPF
79 IF LPF="Y" THEN H=H*16
80 INPUT "FILTER CUT-OFF FREQUENCY (0-255)".FF
```



# COMMODORE 64 PROGRAM

```

141 DIFFCORRFD235THENPRINT"OUT OF RANGE" GOTO148
145 INPUT"FILTER RESONANCE (0-15) " :FR
146 DIFFCORRFD15THENPRINT"OUT OF RANGE" GOTO145
147 FR=FR*16<0
148 INPUT"DCTRVFR (V/HZ)" :08 IFDS="V"THENC=1 GOTO158
149 C=0
150 INPUT"VOLUME (0-15)" :V
151 IFV215ORV68THENPRINT"OUT OF RANGE" GOTO158
155 VOL=VOL+V
160 PRINT"PRESS ANY KEY TO PLAY"
170 IFPEEK(127)=64THEN178
175 PRINT"MPRESS RUN/STOP RESTORE TO STOP"
180 GOSUB500
190 RUN
500 REM
501 REM PLAY MODE
502 REM
510 POKES=2,FR*16255 POKES=3,INT(PW/256) POKES=5,RD POKES=6,SR
520 POKES=846,M*16+1
530 POKES=22,PF POKES=23,FR POKES=24,VOL
535 POKES=847,HR POKES=848,0
536 IFC=1THENPOKES=12,RD POKES=13,SR POKES=5,FR*16255 POKES=18,INT(PW/256)
540 SWS=0152
550 RETURN
999 REM [CLR]
1000 PRINT"J" POKES=289,11 POKES=281,12 POKES=46,11
1005 RENHOME107 CRSP [DOWN]
1010 PRINT"XXXXXXXXXX"
1011 PRINT"
1012 PRINT"   * * * * *
1013 PRINT"   * * * * *
1014 PRINT"   * * * * *
1015 PRINT"   * * * * *
1016 PRINT"   * * * * *
1017 PRINT"   * * * * *
1018 PRINT"   * * * * *
1019 PRINT"   * * * * *
1020 PRINT"XXXXXXXXXXXXXXXXX R F R XXXXXXXX"
1021 GOSUB2388
1022 PRINT"XXXXXXXXXXPRESS SPACE BAR TO CONTINUE"
1024 IFPEEK(197)=68THEN1062
1029 REM [CLR][CRSPR [DOWN]
1030 PRINT"XXXX" RETURN
2000 FOPR=49152049367 READR POKES,0 NEXT RETURN
2001 DINT216,24,165,197,281,84,248,250,32,162,192,32,56,192,76,2,192
2010 DINT142,8,221,111,192,248,8,202,224,17,288,246,96,141,51,287,139
2020 DINT108,178,189,128,192,141,83,287,232,189,128,192,141,52,287,96,173
2030 DINT252,287,141,8,212,189,55,287,141,14,212,173,53,287,141,1,212
2040 DINT165,8,141,15,212,172,54,287,148,4,212,32,193,192,165,197,281
2050 DINT14,248,11,200,51,287,248,245,32,162,192,76,58,192,173,54,287
2060 DINT41,294,141,4,212,141,11,212,96,12,13,23,18,28,31,26,28
2070 DINT29,39,24,36,47,42,44,45,55,2,48,2,66,2,122,2,158
2080 DINT2,191,2,248,3,25,3,72,3
2090 DINT126,3,181,3,235,4,36,4,36,4,172,4,244,5,68,5,138
2100 DINT52,17,192,174,141,2,248,22,24,173,52,287,189,52,287,141,52
2110 DINT287,173,53,287,189,53,287,141,53,287,292,288,234,96,173,56,287
2120 DINT248,258,173,53,287,74,141,8,212,173,52,287,186,141,7,212,148
2130 DINT11,212,96

```



## Castle 48K Spectrum £4.95

1/Emulation, 624 Brixton  
Road, Wigan, Cheshire WA2  
9LS.

An imaginative way to learn 60 specialist words associated with medieval castles and to find out where they belong in the castle added to the 10 to 15 age range, it would also be useful to adults. Accompanying the cassette is a file with 60 words and their meanings, and 50 (1) episode grid, on which you can enter a plan of the castle as you learn around, naming each square and looking for those pieces of a gold puzzle.

In order to progress you're asked a question relevant to the

part of the castle, and a correct answer allows you to proceed to your quest. A wrong answer brings a magical hint and a puzzle appearing to let you into the next, before you restart — which can be tedious if you are deep into the castle. Handwritten notes appear to across the right to let you know your position on the grid.

All spellings must be correct, and up to four mistakes are given for each question asked, but be careful to follow directions, keys and hints as much as possible.

instructions	10%
size of the	10%
display	10%
value for money	70%



## Treasure Hunt Toolkit 48K Spectrum £4.95

DB Computers, 30 Calver  
Lane, Mansfield, NG18 7TB.

This package comprises seven programs based to a theme, designed to help you check 64 words and their meanings based on books and computers.

The program will accept a keyword and give it a number in an effort to make sense of it. All you do is push the button? Or have about 600? The prog will show you an 8x8 grid containing letters and read off the words, or change the program to work on an attempt to check someone else's, well, certainly, you can save different letters to the display to see a professional way.

The program is written in BASIC, but is fast enough. The graphics are well thought out and also with good use of colour and sound. They make the presentation much more professional.

Apparently the book "With Interest" by David I. Bone, is more of a word compiler to be used with coded puzzles. Check the code and you can show a large cash prize, a percentage of sales you, in a January book charity appeal on this — a very worthwhile package — a really shocking challenge. A 60 minutes is included.

instructions	10%
size of the	10%
display	10%
value for money	70%



## Touchstone Dragon 32 £8

Microdot, 41 Tran Rd, St  
Kewell, Cornwall PL25 3LE

A machine code graphic game for up to two players.

The object is to traverse the maze, collecting treasure and keys and pass the secret of the Touchstone. The 10 levels consist of two distinct mazes, each shown on screen long — providing a memory's task. Touchstones are located in various chambers and keys are required if you collect them. Keys are needed to open the door towards the end of each maze.

There are some chambers in which you rest. First different material than you. Luckily, you are equipped with a light ray which shows from your own Touchstones, you too only show Touchstones up the screen have a flash of lighting on your level if you're not careful.

The maze is divided into two parts, the top being devoted to secret, the top being devoted to secret. The lower part is the main window which shows a screen full of the current maze.

There are many other features in this complex but thoroughly enjoyable adventure. (Authors' program, I particularly liked the opening melody. One of those "have you not seen my" pieces.)

instructions	10%
graphics	10%
graphics	10%
value for money	70%



# Time for some fun!

Sit down and get ready for a good time. These games have been assessed for you by our panel of reviewers. Check before you buy and get the best value for your money

## Sky Diver TI-99/4A £8

Major Ltd MicroWare, 10 Adams  
Rd, Stockport, Cheshire SK4  
3AH

As first the screen is reflecting diving from them of the border and dragon chase which have been. Finding the right! However, the programming is not too bad and graphics, and a couple of new appeared, making it easy to make the program.

The aim is to make a successful parachute jump, choosing the moment to leave the plane, open the main chute — in the corner of the hole — and avoid the dragon towards a target.

The use of graphics is unusual, and the program seems

to be very long, using most of screen to hold and occupying most 11K when running. The keyboard is used to control the plane and parachute, while the computer controls the landing of the plane. The forward descent of the plane you also be controlled, although this controls the speed, and is under control constantly the need to try before a certain value. Points are awarded or deducted according to accuracy.

Up to five players may take part, but I find their names will be short-lived.

instructions	10%
graphics	10%
graphics	10%
value for money	70%



## Katerpillar 2 Dragon 32 £8

Tom Mox, 41 Tran Rd, St  
Kewell, Cornwall PL25 3LE

A machine code adventure game in which you contend with Katerpillars, snakes and dragons. This game is for one or two players using peripherals.

Each player starts with three lives. Your first is consumed and the location of the screen and a number of mushrooms are scattered all around you. These cannot damage you but you can destroy them. Katerpillars descend from the top of the screen and you can hit them head or body segments. Once hit, three segments from the end of the screen. If you don't completely destroy a Katerpillar before it reaches the bottom of the screen, it starts to crawl and disappears with head segments appearing at its rear increasing size.

Beginners appear to frequent accidents leaving a trail of mushrooms behind them. You can destroy a Katerpillar by hitting it twice. The Katerpillar is eating towards appears in sections, as do the worms.

If all the segments of a Katerpillar are destroyed then you start to go to the next difficulty level and the next Katerpillar.

The screen presentation is very good. The program loaded with no major problems. As machine game which I shall consider to playing again.

instructions	10%
graphics	10%
graphics	10%
value for money	70%



# Star Wars moves into software

Sometimes I feel there isn't a person in the world who hasn't heard of George Lucas, but just in case you haven't been living in a deep freeze for the last 12 years, he's the man responsible for the Star Wars films.

Just recently he has started a division of his company Lucasfilm, called the Atari Computer Division, and has brought out two new games called *Star Wars: The Force* and *Star Wars: The Empire*. The games will be distributed and sold by Atari under the newly created *Star Wars* label, and will be available in cartridge form for the Atari home computer line and video game machines as well as for other popular home computers.

The first attempt to bring the same high quality graphics craftsmanship to video games as it did to films. The games were announced for the third quarter of this year, which contradicts Atari's policy of not announcing products more than a month in advance. They apparently did this in order to avoid the one system of announcements which arose each year around the time of the summer Consumer Electronics Show held in Chicago in June.

In *Force* on *Proton* the aim is to recover stranded pilots while operating a shuttle craft. To simulate energy-rich, forceful geometry was used — a form of controlled random effects giving the impression of the complexity found in nature. (It also apparently gives the game its name.)

In *Empire*, on the other hand, is a futuristic soccer game (football to you). Both games feature a first person frame of reference. That is, the screen appears to be what you would see if you were there rather than the more classic type of game which has you manipulating the actions of a character on screen. Lucasfilm is planning to make at least a dozen more games in this year.

Atari hopes that these games, and presumably others which they will develop, will secure the firm's former position of dominance and influence in the industry and of status in the marketplace. The cartridges used for the Lucasfilm games mark the first time that a ROM-style game cartridge sold for a home computer contains as much as \$2K.

The games are expected to sell for about \$20. By the end of this year, Atari is expected to release two hard versions that will run on the IBM 486, IBM PC, and the Apple II family. These will be marketed under the *Star Wars* label. All told, Atari expects that the new games will be able to run on a total of three to four million home and personal computers including a million or so Atari 1200 video game machines. The games, however, are not being redesigned to run on actual arcade computer machines.

As a final note, some high-ranking Atari officials are a bit worried after finding out that some early versions of the new games have found their way out of the box and into the hands of some users' groups and, of course, software pirates. Although they are worried, there doesn't seem to be much they can do about it, except hope that the final versions will be better and will sell enough to make the piracy factor insignificant.

The program supports windowing, so that more than one area of the spreadsheet can be displayed on the screen simultaneously, although in practice the 40 column screen limits the usefulness of this feature. The window can be locked together, allowing simultaneous scrolling.

After a command has been entered, the program will usually ask you a series of questions relating to the command. The questions are clearly written, and will lead you through some potentially very complex operations. If you become confused, an extensive on-line help function is available with one press of the F0000 key. The program has all of the regular spreadsheet features.

In terms of performance, the program is just what it comes to reestablishing, or doing any of its other functions. It is very slow to load and save, so much so you may think something is wrong with your disk drive. Also, when you quit the program, the 14's regular operating system is first to finish, requiring you to turn off the machine and wait up again from scratch if you wish to do anything else.

The program is copy-protected, although a registered user can buy one built-up copy for a very low fee (\$20 in the U.S.). The program is replaceable when it comes to the disk; you must use the 1341 for your first drive. Also, if you wish to print the results, your printer must be 1341 compatible. This is, of course, no major disadvantage to dedicated programs which are copy-protected.

Documentation is good. The on-line help is for more useful than the 421-page document that accompanies the program. The can be somewhat intimidating, but it is clear that this complex program is not designed for the casual user. Certainly, it has not been designed to balance a personal checkbook.

Now for the good news. The product is being distributed by ETE, whose support is excellent. On top of that, the list price is a mere \$20 compared with the several hundred dollar price for the same program on other more expensive computers. For more details contact Human Engineering Software, Anaheim, California 92705. (415) 458-4171. Happy coding.

## ★★★★★

A short reminder about a firm called Datasoft, whose products I have mentioned from time to time. It markets a complete line of business educational and entertainment software for all ages, children, and levels of computer sophistication, and for virtually all popular computer brands. One of its latest products is called *Point & Click*. It allows users to roll up and fill in basic shapes with different colors, shapes or checks. It uses software of the IBM 486's release edition and is much easier to use than some to accomplish the same tasks as BASIC programming. The program is both educational and entertaining. Contact Datasoft at 1641 Fairlight Avenue, Chatsworth, California 91311. (818) 788-1202.

## ★★★★★

I just had to pass that one along. Quarterlock Software, a Santa Monica (near-line) LA (of course) has revealed its new marketing trick: please which it plans to use to promote its new window-based software product called *Drop*. The phrase is "Drop me what you will." Home. Bring me my wigs and chains. This promise is to be one program that will be easy to wrap into shape.

Looks like I'm right out of space again. See you next Tuesday.

Bob Iers  
Fairfield, California

## ★★★★★

This next bit of news will be of interest to those of you who need or want to run extensive financial modeling spreadsheet analysis on your Commodore 64 but have found previously available programs too limiting. Microsoft has just released a version of their powerful *Multiplan* program for your computer.

What makes *Multiplan* different from earlier spreadsheet programs is that it uses words for commands, rather than initials or abbreviations. Another difference is that the program allows you to refer to areas of the spreadsheet (specified by row by name, rather than by row and column). You can link cells on the sheet, so that changes in one cell update relevant cells.

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## Figure 38. HIGHER CONCENTRATION TITRALLY 1, July 1964.

# The Key To Success!

Now, with the new Stonechip Spectrum Keyboard, the user has no worry of damaging the Spectrum itself as improved designing enables it to fit the case perfectly.

Assembling the case is simple as it consists of two halves, the top half containing the keyboard, with a small printed circuit board, attached by ribbon cable, plugging into the rear of the Spectrum. The lower half fits precisely around the Spectrum, thus preventing any risk of damaging through movement.

Your Sinclair guarantee need not be invalidated since the Spectrum does not require removal from its case.



## THE MAIN FEATURES OF THE KEYBOARD ARE:

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- ☐ Full-length space bar.
- ☐ Built-in 'Echo' amplifier and tape interface
- ☐ RESET keys remove the need to disconnect power supply lead
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- ☐ Fully compatible with Interface 1 and most peripherals

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